



Air Conditioner ACAC-1800BTU H Ex Proof

**Explosion Proof Rating ATEX Zone 2 T5
Dust and Water Protected According IP54**



Part No. 8700002

Manual

INHECO GmbH reserves the right to modify their products in order to improve their quality. These modifications do not have to be documented as a rule.

This manual and the information herein have been assembled with the necessary diligence. **INHECO** GmbH does not assume liability for misprint or damages caused by misprint.

The brand and product names within this manual are registered trade marks and belong to the titleholders respectively.

Table 1: Version Management

VERSION NO	RELEASE DATE	CHANGES TO PRIOR VERSION
1.0	March 2004	Release
1.1	April 2004	Appendix: CE Certificate
1.2	April 2004	Changed Pictures on Page 1, 13, 22
1.3	June 2004	Changed operating voltage of max. 132 Vdc

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This manual belongs to

Type _____

Serial No. _____

Year of manufacture _____

Order No. _____



To be filled in by customer:

Inventory No. _____

Place of installation _____

Meaning of this Manual

This manual is part of the Air Conditioner “ACAC-1800BTU Ex Proof H” and must be

- retained until the Air Conditioner is disposed.
- passed on when the Air Conditioner is sold or lent .

Please contact the manufacturer in case you do not understand something within this manual.

Your opinion on this manual provides us with valuable insights on how we can serve you better. Please do not hesitate to direct your comments to us at the address or the phone numbers on page 4.

The safety instructions must be read very carefully. They must be understood and observed in order to ensure a safe handling.

Missing or insufficient knowledge of the manual leads to loss of liability against **INHECO** GmbH. The operator should therefore ask for a instruction confirmation from the manufacturer.

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1 Explanation of symbols



A possible danger, leading to serious bodily harm is being pointed out to you.



A possible danger leading to less serious bodily harm is being pointed out to you. This signal also warns you of tangible damage.



A possible dangerous situation leading to material damage is being pointed out to you.

Important!



This sign refers to useful information as to installation etc.

Note



Bullet points refer to enumeration.



These arrows are intended to give instructions.



These squares refer to procedures which run automatically and results which should be achieved.

2 Safety Instructions

2.1 Conventional usage

The Air Conditioner (AC) unit meets the current technical level and complies with today's standards. The manufacturer attached much importance to the user's safety.

The following rules apply to the user:

- Rules of accident prevention
- General rules for technical safety
- EU and other country specific directives

The conventional usage contains the usage according to the manual. This unit is to be used only in the specified environment.

2.2 Who is permitted to operate this unit?

Only instructed and skilled personnel is permitted to mount and operate this unit. Only specialized staff is allowed to make any amendments of the operating menu.

2.3 Shut down and Disposal

The unit is to be disposed according to the effective environmental directives.



3 For your Own Safety

Disconnect the unit from any power supply system when installing it. By doing so, accidents can be avoided.

3.1 Technical Changes

- For safety reasons no technical changes to this unit are allowed. Any modification or change, which is not approved by the manufacturer, leads to loss of guaranty.
- The original parts are designed especially for the Air Conditioner. Parts provided by other suppliers are not tested and therefore not approved by INHECO GmbH. Using them can lead to the impairment of the functionality of the unit.
- For damages which may occur due to the usage of non original parts, liability is excluded by INHECO GmbH.

3.2 Malfunctions

- ⇒ Report occurring malfunctions immediately to the responsible person.
- ⇒ Make sure the unit is secured against violation and misuse.
- ⇒ Dismantled safety relevant parts have to be mounted and checked before initial operation.

3.3 Name Plate and Labels

- ⇒ Please observe all name plates and labels and make sure to maintain their legibility.
- ⇒ Replace all name plates and labels if their legibility is no longer ensured.

4 Other Hazards

4.1 Electric Shock Hazard



You can suffer an electric shock, if the unit is not connected properly, or if the unit is not disconnected from the power supply system, when working with open housing or during mounting procedures.

Please observe the following measures in order to avoid muscle convulsions, burns, unconsciousness, apnea and even death:

- ⇒ Do not work with open housing when unit is connected to the power supply system.
- ⇒ The unit is operated at a voltage of up to 132 Vdc and a current up to 12,5 Adc.

4.2 Burn Hazard



You can burn your skin, when touching the heat sinks of the Air Conditioner. The heat sinks can reach up to +75°C!

The heat sink cools down only slowly after switching off the unit.

4.3 Risks of Injury



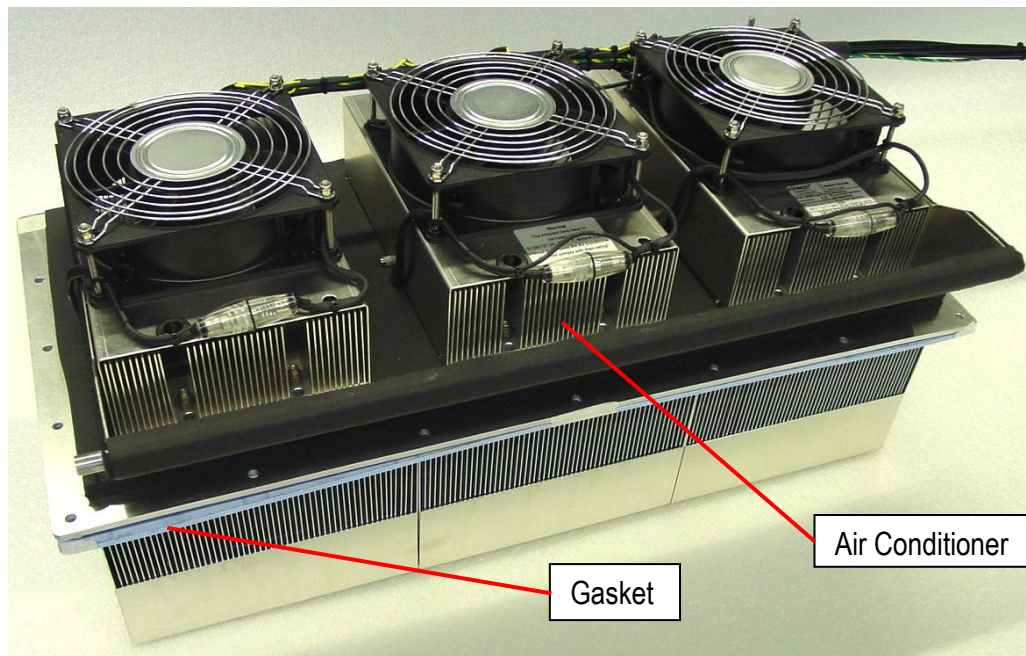
You can injure yourself, when you touch the running impeller by hand. You also can be injured, when you hold items into the area of the running impeller. Do not remove the finger guard before switching of electricity

Initial Operation

4.4 Scope of Supply

Before initial operation make sure that shipment was complete and no part has been damaged. These components should be included in each shipment:

- Air Conditioner (AC)
- Gasket
- This Manual



Picture 1: Scope of supply

5 Mounting

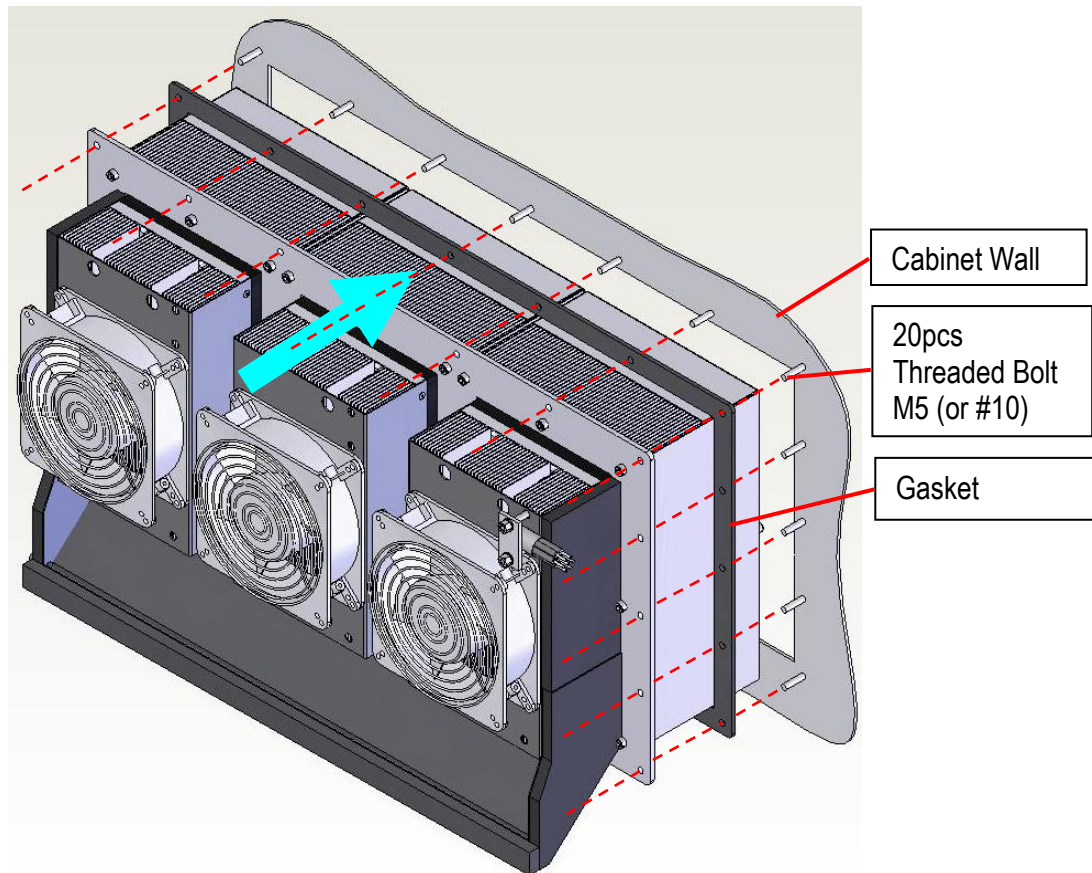
Mounting of the unit should be carried out by instructed personnel only! Use adequate tools only for all screw types and sizes.

Be sure, that all air inlets and air outlets both at the ambient and cabinet side are open, so that air can circulate. Check whether the distance between the inlets and all walls are minimum 50 mm at the ambient side and 40 mm at the cabinet side.

Check also, that the air flow from the outlets of the heat sinks do not interfere with the walls of the cabinet, as areas with high air speed or turbulences at the walls can reduce the function of the thermal insulation. Use flow channels or air shields to direct the air flow to areas where it is needed.

If these minimum distances and flow channels or air shields are not given in the mounting position, the heating and cooling performance of the unit cannot be guaranteed.

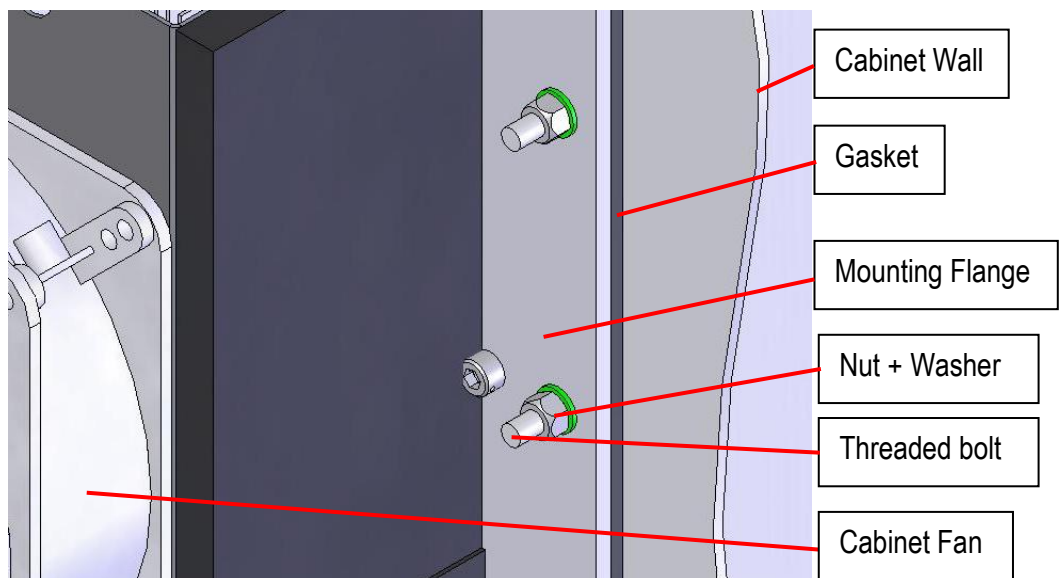
Mounting procedure:



Picture 2: Mounting of the Air Conditioner (AC) from inside the cabinet

- ⇒ The cabinet wall must have 20 pcs threaded bolts M5 (or #10) for mounting the Air Conditioner. The AC is mounted from inside of the cabinet.
- ⇒ The Drip Pan should be mounted after the Air Conditioner is fixed to the cabinet wall.
- ⇒ Check whether the area for the gasket around the cutout in the cabinet wall is properly finished and free from any dirt, dust or any other materials. Recommended surface roughness $R_t = 50 - 160 \mu\text{m}$.
- ⇒ Place the gasket inside the cabinet wall by using the ends of the 20 pcs M5 (or #10) threaded bolts to position the gasket. Check the fit and position of the gasket. Both sides of the gasket and opposite surface of the mounting frame must be clean, flat, undamaged and free from grease or separator.

- ⇒ Take the Air Conditioner and hold it in upright position, and fit in the cabinet side of the Air Conditioner through the cut out in the cabinet wall. Fix it with 20 pcs M5 (or #10) nuts and washers. The nuts should be tightened crosswise in three rounds to assure a proper press fit of the gasket. During the first round apply 50 % of the torque, during the second round 80 % and during the third round apply the full torque. The torque should provide a pressure between 2000 and 5000 psi to guarantee a sufficient function of the gasket. Please check, whether the applied torque does not damage the screw thread. Check the torque 24 hours after mounting.



Picture 3: Mounting of the Air Conditioner (AC)

- ⇒ Check visually, that the gasket between the ambient side heat sink base and the cabinet fits properly and is not damaged.
- ⇒ Switch off all electricity power for the cabinet.
- ⇒ Connect the 9 leads to the power supply (controller) inside of the cabinet as specified, see also the *Wiring scheme* in chapter 11. **The sensor loop must be connected and detected. Otherwise the Air Conditioner does not comply with ATEX rating! The sensor loop detects overtemperature at the surfaces of the Air Conditioner.**
- ⇒ In case of a malfunction the overvoltage must be limited to max. +20% of the value shown in the chapter Technical Data. **Warning! If the Overvoltage is higher than +20%, the Air Conditioner does not comply with ATEX rating!**



6 Dismounting

Dismounting of the unit should be carried out by instructed personnel only! Use adequate tools only for all screws.



- ⇒ Shut down the main power for the AIR CONDITIONER .
- ⇒ Disconnect the 9 leads to the power supply (Controller) inside of the cabinet as specified in the corresponding manual, see also page 18.
- ⇒ Dismantle the 20 pcs M5 (or #10) nuts and washers. Be careful to prevent the unit from falling down, as there are no additional safeguards, when the screws are removed.
- ⇒ Take out the unit through the cutout of the cabinet wall.
- ⇒ If necessary take off the gasket from the base of the ambient side heat sink or the cabinet wall.



- ⇒ Before mounting the unit again, check the screws, the screw threads and the gasket for damages. **Warning! Do not use damaged or not original parts for mounting the unit! Warning! When screws or / and the gasket are damaged, the Air Conditioner does not comply with ATEX rating ! Do not use the Air Conditioner with damaged screws or gasket in environments, which require ATEX certificates!**
- ⇒ Replace damaged parts according the replacement parts list.

7 Initial Operation



Note

For the exact specifications of the Temperature Controller for the Air Conditioner please refer to the corresponding manual.

Check: the temperature controller must ensure, that even during the worst case the voltage does not exceed 20% of the specified maximum nominal voltage. The controller is not included in the Air Conditioner package and for this reason the device is marked with the symbol X accordingly to the ATEX standard EN 50021 12.2.10.4, chapter 13 c.

- ⇒ Turn on the power for the Air Conditioner (AC).
- ⇒ Check the proper function of the ambient side fans. When connected right, the air streams goes through the fans and blows out at both ends of the ambient side heat sink
- ⇒ Check the proper function of the cabinet side fan. When connected right, the air streams goes through the fan and blows out at both sides of the cabinet side heat sink
- ⇒ **To avoid malfunction of the AC, all 6 fans have to work in the cooling mode.**
- ⇒ **To avoid malfunction of the AC, the cabinet fans have to work in the heating mode.**
- ⇒ Check the operation of the heating or cooling function: In **cooling mode**, the heat sinks inside of the cabinet are cold, the heat sinks out side the cabinet are hot. In **heating mode**, the heat sinks inside of the cabinet are hot, the heat sinks out side the cabinet are cold.
- ⇒ **To avoid malfunction of the Air Conditioner in the heating mode, the cabinet temperature must be below +20°C! The cabinet temperature must be controlled by the user to avoid malfunction of the unit.**
- ⇒ **At +75°C +/-5°C (+167 °F) heat sink temperature the Air Conditioner must shut off. The AC is equipped with thermal fuses on all heatsinks. If one heat sink is too hot, an open loop will be detected. The user has to make sure, that the AC is shut off immediately after an open loop (temperature above +75°C +/-5K was detected).**

To start up 1st time or restart during ambient temperature conditions below +4 °C (+40 °F):

- ⇒ Cabinet side fan has to be warmed up above +20°C (+68 °F). Ensure this temperature with a short run in the heating mode before switching on or connection to electricity power. Otherwise damage can not be excluded.



Warning! Do not run the unit without testing the proper function of the heating / cooling mode and the proper function of the open loop detection for the ambient and cabinet side temperature. Otherwise overheating and damage of the unit and surrounding equipment can occur! When the heating and cooling mode and the ambient and cabinet side temperature sensors do not work properly, the Air Conditioner does not comply with ATEX rating! Do not use the Air Conditioner without proper function of the heating and cooling mode and proper function of ambient and cabinet side temperature sensors in environments, which require ATEX certificates!

8 Safety instructions for operation



To avoid injuries and damage, an unimpeded air supply must be ensured at both heat sinks. The maximum ambient temperature must not be exceeded in order to prevent the Air Conditioner from damage.

Lift carefully, avoid side loads or pushing of the heatsinks to prevent the thermoelectric modules from damage.



Warning! When the unit is connected to other than the specified DC voltage and current, the Air Conditioner has lost its ATEX certification! Do not use the Air Conditioner connected to unspecified voltages in environments, which require ATEX certificates!

Warning! To avoid injuries by electric shock, disconnect the unit from the power supply system, before any work on the unit is done. Only instructed personnel is permitted to mount and dismount the unit.

Possible malfunctions of the Air Conditioner are:

- ⇒ Failure of the ambient side fans
- ⇒ Failure of the cabinet side fans
- ⇒ Failure of the temperature controller
- ⇒ Failure of the power supply
- ⇒ Operation above the specified ambient temperature condition

All these malfunctions can lead to increased temperatures at the Air Conditioner specially at the ambient side. These increased temperatures can damage parts of the Air Conditioner .



Warning! When the Air Conditioner or parts of the Air Conditioner are operated under temperatures higher than specified, the Air Conditioner does not comply with ATEX rating! Do not use the Air Conditioner, after it has been operating under temperatures higher than specified, in environments, which require ATEX certificates!

9 Service Instructions

9.1 Cleaning

Check regularly, that the fans and the heat sinks on the ambient and the cabinet side are free from dust and dirt. If necessary, blow out the fans and heat sinks with compressed air. Take care, that the compressed air does not damage the impeller bearing! Check tightness of seal and right torque of all screws, too.

9.2 Full Service

When the AIR CONDITIONER is running within the specified ambient conditions, a **FULL SERVICE** of the unit is recommended after 5 years (43,500 hours) of operation. The **FULL SERVICE** of the AIR CONDITIONER must be performed by INHECO GmbH or by authorized partners of INHECO GmbH.

Warning! When the FULL SERVICE of the unit after 5 years (43,500 hours) of operation has not been performed by an authorized person, the Air Conditioner might be not conform to ATEX certification! Do not use the Air Conditioner after 5 years (43,500 hours) of operation and without performing the FULL SERVICE of the unit, in environments, which require ATEX certificates!

Please contact us for further information on authorized partners of INHECO GmbH.

9.3 Fuse

The ambient fans (Wire #5 + #6) are fused with


3x IEC60127-2/I, 250V, T, 800mA

to limit the maximum current. Ensure, that the Air Conditioner is only operating with this fuse in proper condition. Do not try to operate the Air Conditioner with other fuses or without this fuse. **Warning! When the unit is operating with other than or without the specified fuse, the Air Conditioner has lost its ATEX certification! Do not use the Air Conditioner with other than or without the specified fuse in environments, which require ATEX certificates!**

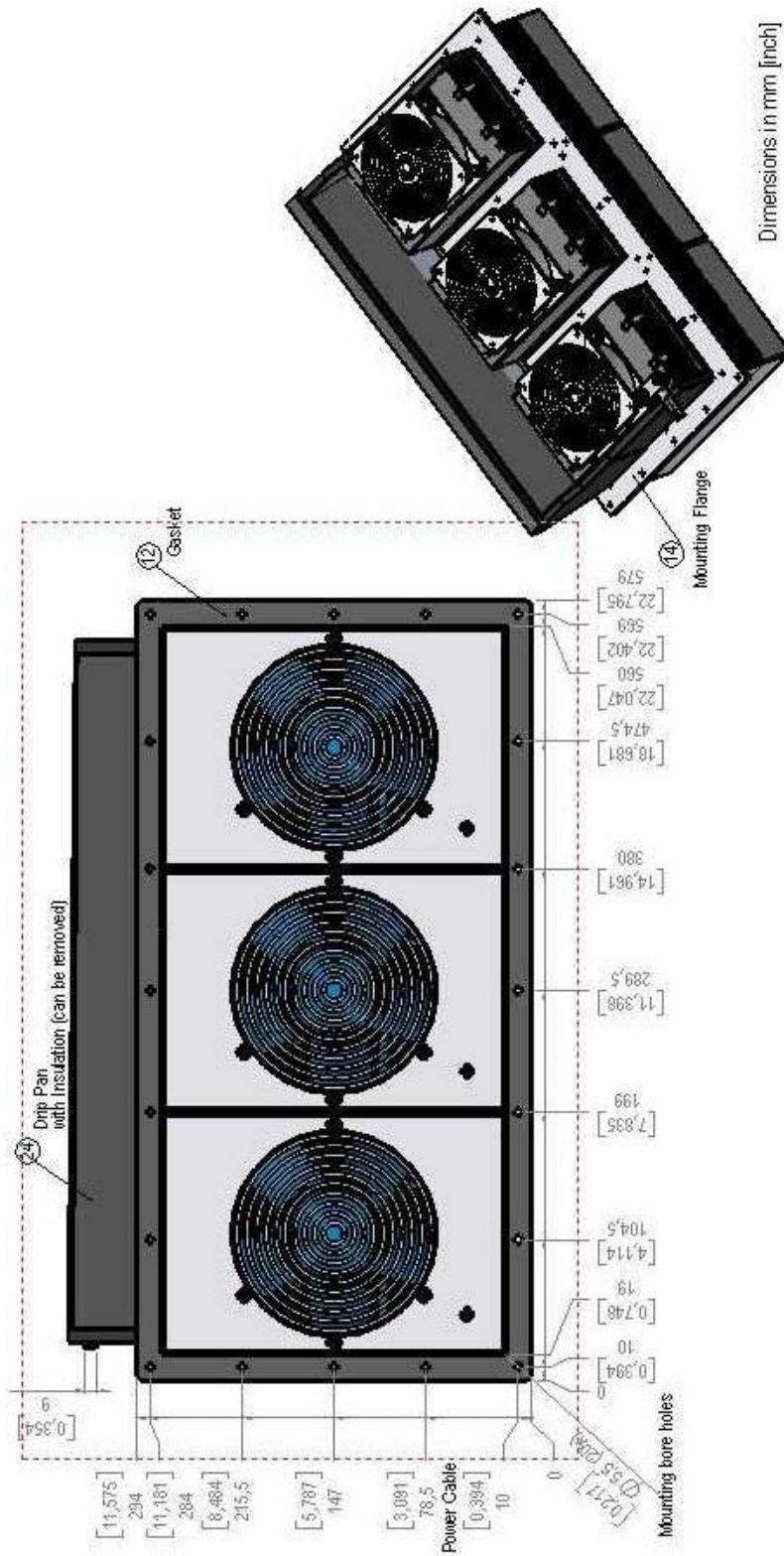
The fuse is part of the Air Conditioner and can be change from inside of the cabinet!

10 Technical Data

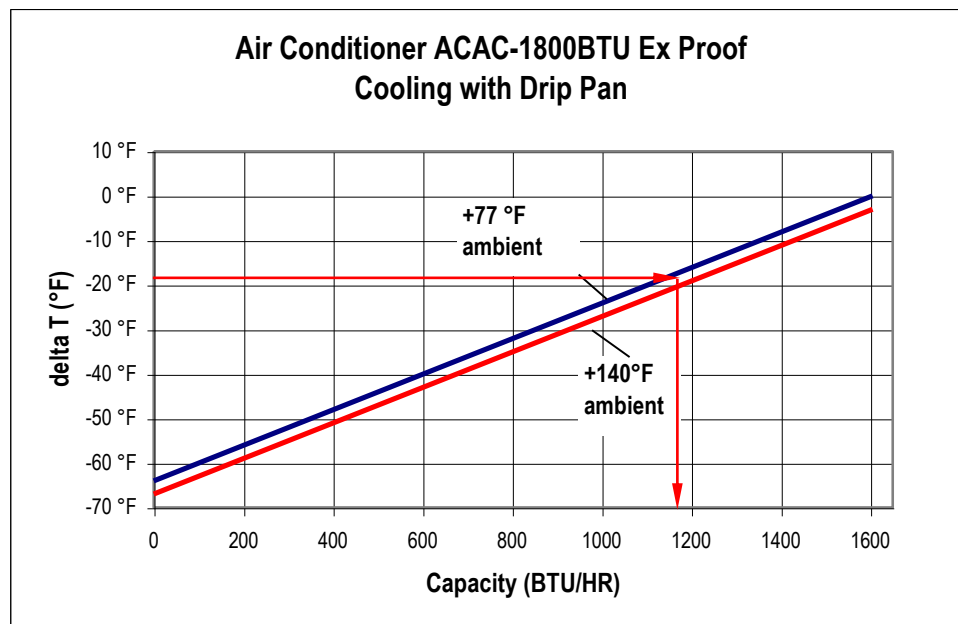
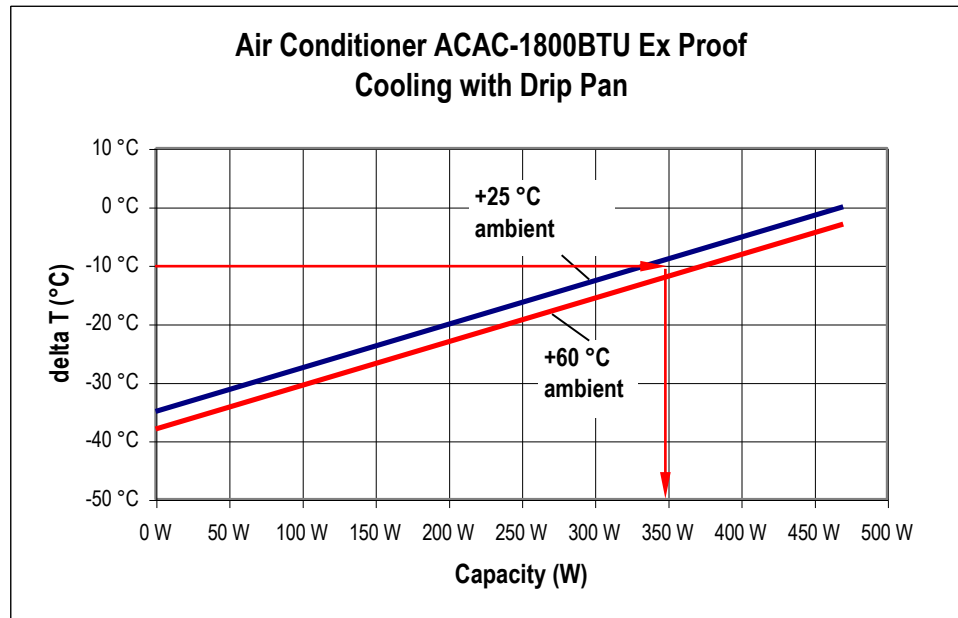
Table 2: Data of the ACAC-1800BTU Ex Proof H

Electric Data	
Max. Capacity at +25°C (+77 °F) ambient and $\Delta T = 0^{\circ}\text{C}$ (+32 °F)	1800BTU /H
Powersupply Thermoelectric module	132 Vdc max. @ 1600 W
Powersupply Ambient Fans	24 Vdc @ 56 W
Powersupply Cabinet Fans	24 Vdc @ 28,5 W
Max. Ambient Temperature*	+49°C (+120°F)
Min. Ambient Temperature*	-40°C (-40°F)
Cabinet Fan Air Flow Papst 5114 N	250 m³/h (147.2 CFM)
Ambient Fan Air Flow Papst 6224 NU	410 m³/h (241.3 CFM)
Weight	about 30 kg (66 lb)
Ratings maintained	CE,  II 3G EEx nA II T5 X
Overall Dimensions	H 265 mm x W 579 mm x D 294 mm (H 10.4" x W 22.8" x D 11.6")

*See 1 Initial Operation on page 11 for more detailed information.



Picture 4: Dimensional Drawings of the Air Conditioner



Picture 5: Cooling Curves of the Air Conditioner in Metric and US Units

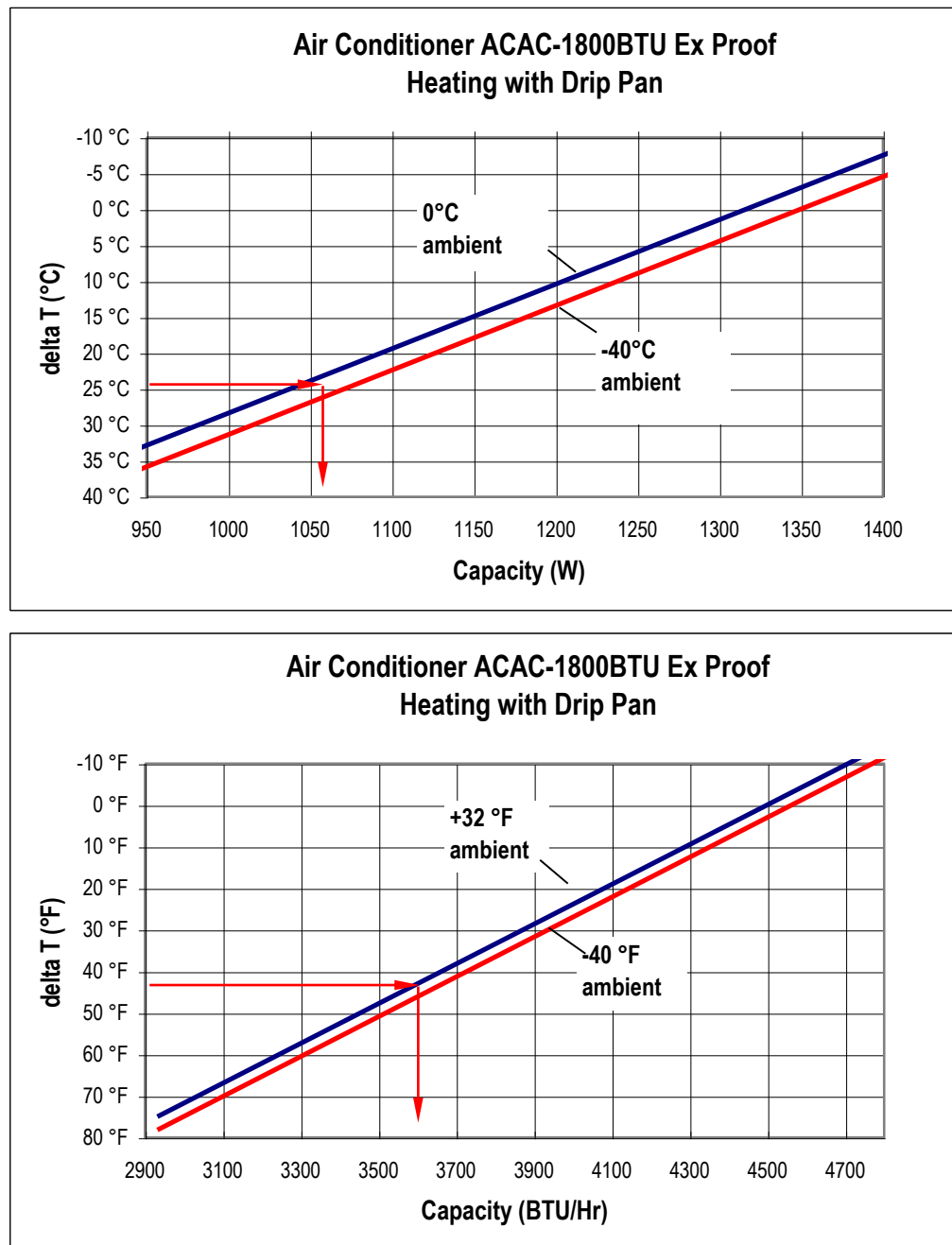
Example for calculating the cooling capacity of the AC with given temperatures:

$$\Delta T = T_{\text{cabinet}} - T_{\text{ambient}}$$

$$T_{\text{cabinet}} = +25^{\circ}\text{C}; T_{\text{ambient}} = +35^{\circ}\text{C} \rightarrow \Delta T = +25^{\circ}\text{C} - (+35^{\circ}\text{C}) = -10^{\circ}\text{C}$$

$$T_{\text{cabinet}} = +77^{\circ}\text{F}; T_{\text{ambient}} = +95^{\circ}\text{F} \rightarrow \Delta T = +77^{\circ}\text{F} - (+95^{\circ}\text{F}) = -18^{\circ}\text{F}$$

Cooling Power = ~350 W (1195 BTU/HR)



Picture 6: Heating Curves of the Air Conditioner in Metric and US Units

Example for calculating the heating capacity of the AC with given temperatures:

$$\Delta T = T_{\text{cabinet}} - T_{\text{ambient}}$$

$$T_{\text{cabinet}} = +5^{\circ}\text{C}; T_{\text{ambient}} = -20^{\circ}\text{C} \rightarrow \Delta T = +5^{\circ}\text{C} - (-20^{\circ}\text{C}) = +25^{\circ}\text{C}$$

$$T_{\text{cabinet}} = +41^{\circ}\text{F}; T_{\text{ambient}} = -4^{\circ}\text{F} \rightarrow \Delta T = +41^{\circ}\text{F} - (-4^{\circ}\text{F}) = +45^{\circ}\text{F}$$

Heating Power = ~1060 W (3585 BTU/HR)

11 Wiring Schematic

Table 3: Wiring Scheme of the Air Conditioner

Wiring Schematic of the integral cable

Description	Wire-No.	Power consumption	AWG	Color
TEC +	1	132 Vdc @1600 W	10 (6,0 mm ²)	Black
TEC -	2		10 (6,0 mm ²)	Black
Fan + (Cabinet)	3	24 Vdc @28.5 W	10 (6,0 mm ²)	Black
Fan - (Cabinet)	4		10 (6,0 mm ²)	Black
Fan + (Ambient)	5	24 Vdc @54 W	10 (6,0 mm ²)	Black
Fan - (Ambient)	6		10 (6,0 mm ²)	Black
Thermal Fuse*	7	open loop detection	14 (2 mm ²)	Black
Thermal Fuse*	8		14 (2 mm ²)	Black
PE GND	9	-	12 (4,0 mm ²)	GN/YE

*Breaks an electric contact when temperature rises.

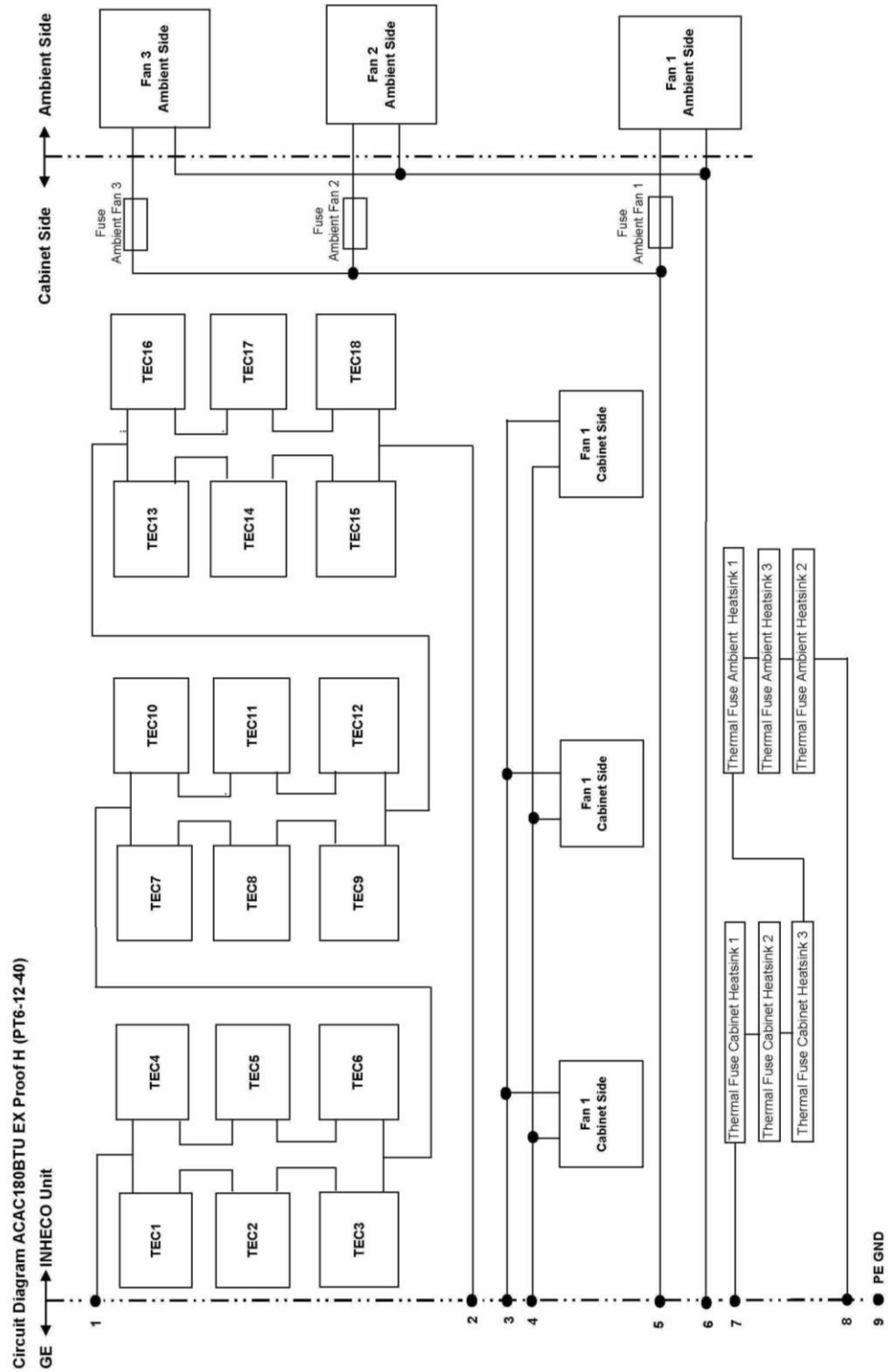
Resets automatically when temperature drops.

Cable length: 10 foot (3 m)

End of cables: End splices marked with permanent wire marker tags,
heat shrink covered, clear

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13:57

TZ_P0200_04-01-07_WiringSchematic_02



Christian George

INHECO CONFIDENTIAL

1 of 1

12 EC Declaration of Conformity

on basis of a voluntary test in accordance with Annex VIII of Council Directive 94/9/EC for equipment and protective systems intended for use in potentially explosive atmosphere (see 13 Appendix, 3 pages: EC Certificate of Conformity, No.: TPS 04 ATEX 1 003 X).

Product: Air Conditioner equipment
Part No.: 382A6205P0001
Model: Air Conditioner System ACAC-1800BTU EX Proof H
Marking:  3G EEx nA II T5 X
Manufacturer: INHECO GmbH
82152 Martinsried
Germany

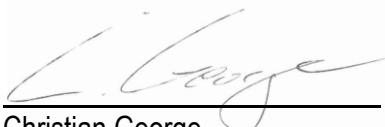
The product mentioned above fulfills the basic requirements of the Directive

- 94/9/EC ATEX Directive
- 73/23/EEC Low Voltage Directive
- 89/336/EEC EMC Directive

and the conformity with the following standards

- EN50014 : 2000 ATEX
- EN50021 : 1999 ATEX
- EN60950 Safety

The indicated product is intended for installation into different machines. Operation is prohibited until the final product concurs with the 89/392/EEG regulations.
This statement does not warrant any characteristics regarding product liability.
Safety instructions stated in the User Manual have to be adhered to.



Christian George
Manager Operations
03/03/2004




Giuseppe Marino
Manager R&D
03/03/2004

13 Appendix

Content of Label

Tabelle 1: Kennzeichnung des Betriebsmittels

Manufacturer	INHECO GmbH ; Fraunhoferstr. 11b ; D-82152 Martinsried, Germany
Serial #	JJ-MM-TT #Seriennummer (JJ=Year, MM=Month, TT=Day)
Description	ACAC-1800BTU Explosion Proof H, Horizontal Mount
Article # GE	382A6205P0001
Article # INHECO	8700002
Category	 II 3G EEX nA II T5 $-40^{\circ}\text{C} \leq T_a \leq +49^{\circ}\text{C}$
max. power consumption fan cabinet side	$P_{\text{imax}} = 3 \times 9,5 \text{ W} = 28,5 \text{ W} @ U_i = 24 \text{ Vdc}$
max. power consumption fan abient side	$P_{\text{imax}} = 3 \times 18 \text{ W} = 54 \text{ W} @ U_i = 24 \text{ Vdc}$
max. power consumption TEC	$P_{\text{imax}} = 1600 \text{ W} @ U_i = 110 \text{ to } 132 \text{ Vdc}$
Fuses of fans on the ambient side	3 pcs IEC 60127-2/I; 250V; T; 800mA Article-#: 194/800 mA from Wickmann
EC Certificate of Conformity, No.	TPS 04 ATEX 1 003 X

(1) EC Certificate of Conformity



(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – Directive 94/9/EC

(3) EC Certificate of Conformity Number:

TPS 04 ATEX 1 003 X



(4) Equipment: Air Conditioner ACAC-1800BTU Ex Proof

(5) Manufacturer: inheco GmbH

(6) Address: Frauenhoferstr. 11a, 82152 Martinsried, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) TÜV Product Service, TÜV SÜD Group, notified body No. 0123 in accordance with Article 9 of the Council Directive 94/9/EC of March 23rd 1994, certifies, based on a voluntary testing, that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive.

The examination and test results are recorded in the confidential report IM 63781 T.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1 + A2

EN 50021: 1999

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC Certificate of Conformity relates only to the design and the construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

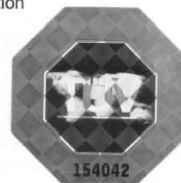


II 3 G EEx II T5

Office of certification of explosion protection

München, 2004-03-24

J. Blum



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EC Certificate of Conformity without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV Product Service, TÜV SÜD Group. In case of dispute, the German text shall prevail.

The document is administrated under the following number: EX 8 04 3 46515 003 X

TÜV PRODUCT SERVICE GMBH • Zertifizierstelle • Ridlerstrasse 65 • D-80339 München
 Gruppe TÜV Süddeutschland



Schedule

(13)

(14) **EC-Certificate of Conformity TPS 04 ATEX 1 003 X**(15) Description of equipment:

The Air Conditioner System ACAC-180-W is an electrical apparatus for the cooling and heating of switchboards. It functions according to the thermo-electrical method. The cooling elements and the aerators serve for better dissipation of the heat outward resp. inward the switchboard.

The air conditioner system is provided for the installation in the cutout of the backboard of a switchboard which is certified according to the Directive 94/9/EC (ATEX). Inside the switchboard, explosive atmosphere is not allowed. In the ambience of the switchboard, zone 2 according to EN 60079-10 is approved. The environmental temperature averages $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +49^{\circ}\text{C}$.

Electrical data:

Voltage, $U_{\text{aerator,inside}}$	24 V to 28 V
Current, $I_{\text{aerator,inside}}$	396 mA
Power, $P_{\text{aerator,inside}}$	9,5 W

Electrical data for the supply of the aerators on the inside of the switchboard

Voltage, $U_{\text{peltier,inside}}$	DC 110 V bis 125 V
Current, $I_{\text{peltier,inside}}$	12 A bis 13,6 A
Power, $P_{\text{peltier,inside}}$	1500 W

Electrical data for the supply of the peltier elements on the inside of the switchboard

Voltage, $U_{\text{aerator,outside}}$	DC 24 V to 28 V
Current, $I_{\text{aerator,outside}}$	750 mA
Power, $P_{\text{aerator,outside}}$	18 W

Electrical data for the supply of the aerator on the outside of the switchboard

(16) Test report: IM 63781 T

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EC Certificate of Conformity without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV Product Service, TÜV SÜD Group. In case of dispute, the German text shall prevail.

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TÜV PRODUCT SERVICE GMBH • Zertifizierstelle • Ridlerstrasse 65 • D-80339 München
 Gruppe TÜV Süddeutschland

ZERTIFIKAT • CERTIFICATE • 認証証書 • СЕРТИФИКАТ • CERTIFICAT



(16) Special conditions for safe use:


The hermetically consolidated construction of the switchboard, which is certified according to the Directive 94/9/EC shall not be affected by the installation of the Air Conditioner System.

(18) Essential health and safety requirements:

met by standards

Office of certification of explosion protection

München, 2004-3-24


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The document is administrated under the following number: EX 8 04 3 46515 003 X

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1. Extension to the Certificate of conformity



- (1) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EG**
- (2) EC Certificate of Conformity Number:

TPS 04 ATEX 1 003 X



- (3) Equipment: Air Conditioner ACAC-1800BTU Ex Proof
- (4) Manufacturer: Inheco GmbH
- (5) Address: Frauenhoferstr. 11a, 82152 Martinsried, Germany

(15) Description of equipment:

The Air Conditioner System ACAC-180-W is an electrical apparatus for the cooling and heating of switchboards. It functions according to the thermo-electrical method. The cooling elements and the aerators serve for better dissipation of the heat outward resp. inward the switchboard.

The air conditioner system is provided for the installation in the cutout of the backboard of a switchboard which is certified according to the Directive 94/9/EC (ATEX). Inside the switchboard, explosive atmosphere is not allowed. In the ambience of the switchboard, zone 2 according to EN 60079-10 is approved. The environmental temperature averages $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +49^{\circ}\text{C}$.

Electrical data:

Voltage, $U_{\text{aerator,inside}}$	24 V to 28 V
Current, $I_{\text{aerator,inside}}$	396 mA
Power, $P_{\text{aerator,inside}}$	9,5 W

Electrical data for the supply of the aerators on the inside of the switchboard

Voltage, $U_{\text{peltier,inside}}$	DC 110 V to 132 V
Current, $I_{\text{peltier,inside}}$	12 A to 13,6 A
Power, $P_{\text{peltier,inside}}$	1795 W

Electrical data for the supply of the peltier elements on the inside of the switchboard

Voltage, $U_{\text{aerator,outside}}$	DC 24 V to 28 V
Current, $I_{\text{aerator,outside}}$	750 mA
Power, $P_{\text{aerator,outside}}$	18 W

Electrical data for the supply of the aerator on the outside of the switchboard

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ZERTIFIKAT • CERTIFICATE • 證書 • CERTIFICADO • CERTIFICAT



The test results of the extension are recorded in the confidential report IM 63781 T.

- (8) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1 + A2

EN 50021: 1999

Office of certification of explosion protection

München, 26.08.2004



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